The State of Texas

Roger Williams
Secretary of State

MEMORANDUM

TO: Ann McGeehan, Director of Elections, Secretary of State's Office

FROM: Paul Miles, Staff Attorney, Election Division Legal Section

DATE: February 21, 2006

RE: Diebold's Voting Systems Examination

On January 19, 2006, Diebold Election Systems ("Diebold") presented modifications to its previously certified voting systems and one new voting system component for examination. In large part, the changes stemmed from upgrades necessary to meet the Federal Election Commission's 2002 voting system standards. The voting systems had undergone review at the Independent Testing Authorities ("ITA") and a copy of the reports along with the NASED certification numbers were included with the application. In reliance on the ITA review, the examination focused on the voting systems' compliance with Texas' voting system standards as set out in Chapter 122 of the Texas Election Code

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AccuVote TSX v. 4.6.4. The AccuVote TSX is Diebold's previously certified direct record electronic ("DRE") voting system. There were no major changes to the process of activating the DRE with the voter access card or to the voter interface. The vendor brought the system for certification because it has been modified to meet the 2002 voting system standards and has also created its AccuView printer module, which is an optional voter verifiable paper audit trail ("VVPAT") attachment.

The printer module is contained in the ballot station, into which the DRE is placed. The printer produces a VVPAT in that the choices a voter selects on the DRE are printed on the tape for the voter's review before the electronic ballot is recorded. If, after reviewing the tape, the voter decides that they match and casts the electronic ballot, the tape is rolled up into the printer's housing. If the voter determines that the tape does not match the selections on the DRE, the paper tape is marked as spoiled and the voter may make changes or vote again on the DRE. The voter does not have access to the tape, which is enclosed in a clear housing window for review. The roll of tape was large and appeared to be unlikely to run out in an ordinary election. When the printer module option is activated, voting is not allowed without a functioning printer--while the DRE may be removed from the voting station, it will not record a vote while not attached to the printer. Due to the large size of the ballot station, this would make curbside voting impossible at a polling place using the TSX in this configuration.

The examiners voted on the TSX. It recorded the votes as cast and the VVPAT reflected the selections. Provisional ballots correctly were not included in the totals. It would be useful if the precinct report reflected the number of provisional ballots cast, rather than requiring the user to deduce the number by subtracting from the public counter. The precinct results were successfully transferred to GEMS, both by modem and directly with the PCMCIA card.

There were no changes to the audio and other procedures for disabled voters.

The question arose during the examination as to whether the state should certify the system as presented as state law does not currently require the use of voter verifiable paper audit trails on DRE voting systems. In the past, the Secretary of State has reviewed voting systems in the configuration presented by the vendor; in the past year a system that featured a voter receipt was conditionally certified. When that system was certified, no federal standards for VVPAT were in place but recently the FEC did finally adopt its Voluntary Voting System Standards, which contained standards for VVPAT. We did not review the system against these standards. The vendor did not assert that the system met the new standards.

I recommend certification of the AccuVote TSX v. 4.6.4 with the AccuView Printer Module with a condition similar to the previously certified AccuPoll voting system that the VVPAT is not the official ballot either for election day or recounts. I recommend that the certification also note that the state does not currently have standards for VVPAT and that the system may require modification if such standards are adopted in the future.

AccuVote TS R6 v. 4.6.4. The AccuVote TS R6 is a previously certified DRE voting system. As with the TSX, the vendor has modified the system to meet the 2002 voting system standards. There were no major functional changes to the R6 as previously certified. The examiners voted on the R6. It recorded the votes accurately. As with the TSX, provisional votes were not included in the precinct totals. The precinct results were successfully transferred to GEMS. According to the vendor, the AccuView printer will not operate with the R6, which is an older model of its DRE.

I recommend certification of the AccuVote TS R6.

Key Card Tool v. 4.6.1. The Key Card Tool is software designed to work in conjunction with the VC Programmer software and allow an election administrator to embed security keys to limit access to the TSX or R6 to voter access cards that contain the correct key. It appeared to function properly.

I recommend certification of the Key Card Tool v. 4.6.1.

AccuVote-OS Optical Scan (Model D) v. 1.96.6. The AccuVote-OS Optical Scan (Model D) is a precinct ballot scanner. As with the other systems, the vendor submitted it for review because of changes made to comply with the 2002 voting system standards. There appeared to be no

functional changes from the previously certified version. The examiners marked and cast ballots on the scanner. The results of ballots cast on the scanner were successfully transferred to GEMS.

I recommend certification of the AccuVote-OS Optical Scan (Model D) v. 1.96.6.

GEMS v. 1.18.24. GEMS is the vendor's election management software, which is used for ballot creation, to accumulate results from early voting and election day polling places, make final disposition of provisional ballots, and produce election reports. GEMS can receive results from the direct loading of flash cards delivered either from a central counting station scanner or the precinct polling place. It can also receive results via modem from the polling place or from a substation.

GEMS runs on Microsoft Windows and operates with a continuous feed printed audit log. The printed log appeared to adequately describe all functions and accesses to the system as required under 1 T.A.C. § 81.62. GEMS would not operate if the printer was off-line or paused.

Provisional votes are added to the election results through GEMS. The appropriate ballots are identified through the ID code placed on the voter's provisional ballot affidavit envelope at the polling place and the GEMS operator, under the authority of the early voting ballot board, determines whether or not to add individual provisional ballots to the final results. The examiners voted provisional ballots and reviewed the process by which they were added to the final result through GEMS.

The vendor was unable to initially demonstrate its ability to receive modem results due to missing equipment. They demonstrated GEMS' ability to receive results by modem the following day.

I recommend certification of GEMS v. 1.18.24 with the condition that since GEMS was presented on a standalone PC, it should be required to be operated on a dedicated PC.

VC Programmer v. 4.6.1. The VC Programmer is the software used in conjunction with a smart card reader device to create voter access cards. It appeared to function properly at the examination.

I recommend certification of the VC Programmer v. 4.6.1.

Express Poll 4000 v. 1.1.5. The Express Poll 4000 is a device designed to contain an electronic copy of the list of registered voters to allow election officials to look up a voter's registration status and to create voter access cards for the vendor's AccuVote TSX and R6. The vendor had previously made the Express Poll available to its users purely as an electronic version of the list of registered voters. Used in that manner, certification was not required as the Express Poll was not directly related to the voting system. The vendor now wishes to allow election judges and clerks to use the Express Poll to create voter access cards for use on its voting system, which does require certification. The vendor presented two versions of the device, a tabletop version

and hand-held device. Though physically different, they both ran the same version of the firmware.

At the examination, the vendor successfully demonstrated the Express Poll's ability to look up a voter's registration and create a voter access card with the appropriate ballot style. The vendor suggested in the future multiple Express Polls could allow instantaneous updates of the voter registration lists over a wireless network at the polling place. This was not demonstrated at the examination.

I recommend certification of the Express Poll 4000.

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